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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/474,801	12/29/1999	KAORU ADACHI	378-366P	2763
2292	7590	07/07/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			ABDULSELAM, ABBAS I	
			ART UNIT	PAPER NUMBER
			2674	21

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/474,801

Applicant(s)

ADACHI, KAORU

Examiner

Abbas I Abdulsalam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-8 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-8 and 10-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/10/04 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 3, 4, 6-8 and 10-14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4, 6-8 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al. (USPN 5585817) in view of Ichikawa et al. (USPN 6127998), Kosonocky et al. (USPN 5355165) and Hirota et al. (USPN 6400404)

Regarding claims 1, 4, 8 and 10, Itoh teaches an image input/output apparatus including an image input section (20), and an image display section (10) arranged in a matrix form. The

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input section includes a photo detective portion (109), which receives light and converts it into an electrical signal. See column 4, lines 9-12, 39-42, and Fig 1. Itoh teaches the photo detective portion with respect to parallel blocks, 109', and 109" and output voltage V (out1), and V (out2). See column 6, lines 17-24 and Fig 5. Furthermore, Itoh teaches the V (out) as it relates to the display section including a transparent electrode (105), a thin film transistor (101), and gate electrodes. See Fig 2. Itoh teaches the supplying of electric signal to a scanning circuit. See column 1, lines 52-55. However, Itoh does not teach transfer path, output circuits that output signals from the vertical travel path in parallel column by column, and input circuits receiving signals from imaging section in parallel column by column. Itoh also does not disclose about parallel to serial and serial to parallel conversions. Ichikawa on the other hand teaches a light receiving portion (801), an LED displaying portion (803), a key matrix inputting portion (803) for adjustment, and a main board (453) from which an output is subjected to serial-parallel conversion. See col. 21, lines 32-67 and Fig 23. Ichikawa further teaches signal transfer switch (327) which can be opened and closed according to the pulse from the shift register (321). See Fig 17.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Itoh's imaging-displaying system to include Ichikawa's matrix inputting adjustment method based on the main board along with serial-parallel conversion mechanism. One would have been motivated in view of the suggestion in Ichikawa that the matrix inputting adjustment method in conjunction with serial--parallel conversion mechanism is functionally equivalent to the desired input and output circuits configurations. The use of matrix

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inputting adjustment and serial-parallel conversion mechanism helps function liquid crystal display as taught by Ichikawa.

Itoh has been described above. However, Itoh does not teach vertical transfer paths such that signals are transferred in parallel column by column. Kosonocky et al. on the other hand teaches an operation of a column of the image sensor in which a photo information is sampled from each P_{ij} by means of a clock f_1 and transferred to its corresponding storage register (G_{ij}) such that the photo information is read out of the registers and transferred in parallel from stage-to-stage along each column. See col. 6, lines 20-34

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Itoh's display image operation to adapt Kosonocky's technique of transfer of photo information in parallel as shown in Fig. 2. One would have been motivated in view of the suggestion in Kosonocky transferring of photo-information in parallel as illustrated in Fig. 2 equivalently provides the desired vertical transfer path. The use of transfer of photo information in parallel helps function an effective image sensor as taught by Kosonocky et al.

Itoh does not teach "the imaging section outputting signals representing an image without horizontally transferring signal charges provided by vertical transfer paths. Hirota on the other hand teaches preventing the signal charges in the horizontal transfer prevention region from being transferred to the horizontal transfer section by means of operation of a transfer control section capable of preventing such transfer of signal charges. See col. 2, lines 3-11.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Itoh's display image operation to adapt Hirota's transfer control section. One would have been motivated in view of the suggestion in Hirota that the transfer

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control section can be applied to prevent signal charges from being horizontally transferred. The use of signal transfer control helps function a solid state-imaging device as taught by Hirota.

Regarding claim 3, Itoh teaches about LCD. See column 4, lines 10-12.

Regarding claim 6, Ichikawa teaches an LCD element with respect to the use of charge holding capacitors of reflecting electrodes (312). See col. 14, lines 8-17, and Fig 16.

Regarding claims 7 and 11, Ichikawa teaches serial to parallel conversion applying to signal outputs from the main board (453). See Fig. 23.

Regarding claims 12-14, Hirota teaches preventing the signal charges in the horizontal transfer prevention region from being transferred to the horizontal transfer section by means of operation of a transfer control section capable of preventing such transfer of signal charges. See col. 2, lines 3-11.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following arts are cited for further reference.

U.S. Patent No. 6,618,090 to Kidono et al.

U.S. Pat. No. 5,716,867 to Kim.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**.

The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to :

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Abbas Abdulsalam

Examiner

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June 21, 2004


XIAO WU
PRIMARY EXAMINER